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Dell Technologies rejuvenates Venkateshwar Hospital's technology infrastructure with a modern, consolidated, and software-defined data center

Advancing medical care through innovative technology utilization

Venkateshwar hospital is a state-of-the-art, 325 bed healthcare facility located in Dwarka, New Delhi. It offers a wide range of medical services and treatments, including but not limited to general medicine, surgery, orthopedics, pediatrics, and gynecology. The chairman of Venkateshwar hospitals, Mr. Rajpal Solanki aspires to achieve excellence in healthcare through a team of highly skilled professionals having access to state-of-the-art technology and no wonder the technology is deeply integrated into the patient experience.

The hospital has implemented a Hospital Information System (HIS), which allows nurses and doctors to easily access patient records, update vitals and manage prescriptions through the use of mobile computers known as Computer-on-Wheels (COWs). Additionally, the hospital employs a Picture Archiving Communication System (PACS) to securely store and backup critical imaging data from various equipment such as X-ray, MRI, CT, Cath lab, and nuclear medicine images. This data is made available to doctors through their HIS mobile applications, which is supported with a Dell Unity 300Hybrid Storage solution.

Venkateshwar hospital has a suite of custom-designed mobile applications that are tailored to meet the specific needs of different departments and workloads. At the helm is a dedicated team of IT professionals, led by Mr. Jainender Sharma, the Assistant General Manager of IT. Enthused by the chairman's vision, Mr. Sharma has been taking up technology initiatives that not only benefit the business and operations, but also aim at maximizing the ROI of the IT investments.

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> "The decision to go with Dell Technologies and Arrow PC is proving to be a wise one as the system is robust, future-ready and fully equipped to handle additional workloads. It is a shot in the arm for our upcoming new cancer and dialysis hospital in the adjacent wing."

Mr. Kamal Solanki
Chief Executive Officer
Venkateshwar Hospitals

Solutions at a glance

- PowerStore 500T
- PowerEdge R650xs
- VMware vSphere

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Business needs

Over a period of time, the patient occupancy had increased to almost full capacity, and there was a corresponding growth in the adoption and utilization of the HIS. As the hospital's workload grew, the existing system required frequent upgrades, which proved to be a challenge. In order to upgrade and optimize their IT infrastructure, Venkateshwar Hospitals set a goal of consolidating their systems in a high availability mode, while ensuring near zero downtime and minimal impact on daily operations. The previous data center infrastructure was characterized by multiple, discrete systems. Mr. Sharma and team continued to face challenges with monitoring, managing, and upgradation of their applications and workloads and troubleshooting issues. Additionally, the managing of many servers and running multiple apps was limiting their ability to function seamlessly and created performance bottlenecks.
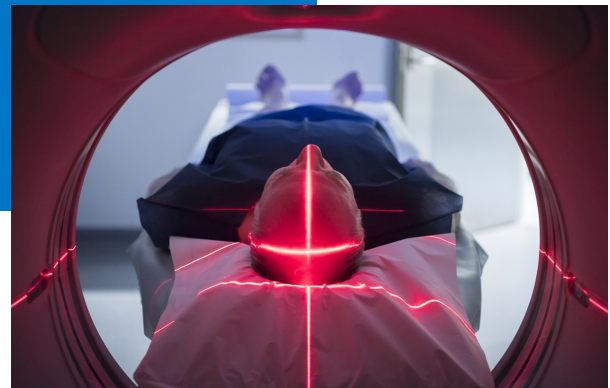
Whenever an error occurred or upgrade was required, a thorough process had to be followed. This included obtaining necessary approvals, acquiring new hardware, scheduling a period of downtime, and preserving important data to prevent disruption of current operations. Working with engineers at night to quickly address the issue and return to normal operations as soon as possible, was cumbersome but unavoidable. The entire process was tedious and took about 10 days to complete.

Prescribing greater efficiency and reducing downtime: Partnering with Dell Technologies and Arrow PC

Having already been a Dell Technologies customer, Venkateshwar Hospitals reached out to Arrow PC, a strategic partner of Dell Technologies in the region, to seek solutions for the challenges they were facing. The team at Arrow PC suggested the conversion of the siloed data into a single cluster, i.e a VMWare platform with high performance.

To gain a deeper understanding of the performance issues faced by the IT team at Venkateshwar Hospitals, Arrow PC used Dell Technologies' Live Optic tool within the existing datacenter to observe and analyze the issues. After running the tool for about 72 hours, and covering all scenarios, the assessment provided a comprehensive analysis of the hospital's IOPS.

The assessment was followed by a detailed presentation on the resource deployment and utilization, as well as key areas that required attention both in the current situation and for future workloads. Further, multiple discussions with the Dell Technologies team were undertaken on parameters such as networking, compute, data handling, data security and the transition to a virtualized set-up.

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"Venkateshwar Hospitals aimed to improve efficiency and to be future ready through virtualization and clustering servers and upgrading the HIS and associated apps, as they are crucial to hospital operations."

Mr.Jainender Sharma
Assistant General Manager-IT
Venkateshwar Hospitals

Arrow PC initiated the process by starting with the expansion of the storage of their existing Dell Unity 300 used for the hospital's PACS and SQL. As a next step, the team deployed Dell Power Store 500T, a high-performance, programmable, NVME storage solution that prioritizes performance and features intelligent storage software, along with virtualization. This approach would be more efficient than continuously upgrading physical server hardware to meet the growing demands of the HIS.

In order to enhance the compute performance of the applications and allow for remote monitoring and control of the servers, Dell PowerEdge R650xs rack server was deployed. This platform is specifically designed to support virtualization and scaling of databases. Additionally, the R650xs is designed to be expandable, making it simple to add hardware as workloads increase. This also allowed for quick resolution of the need for additional storage space for the constantly growing patient records in the HIS with a few actions performed on a single dashboard. On the data side, while Dell Technologies and Arrow PC had originally promised a database compression rate of 4:1, they exceeded expectations by further optimizing the network, resulting in a compression rate of 6:1.

The decision of the hospital to choose Dell Technologies solutions for its current operations has ensured scalability and future-readiness, as the new IT system is capable and robust enough to handle future workloads and facility expansion plans. This is an opportunity for the hospital to better serve community healthcare needs and offer expanded services.

"It is with great pride that we collaborate with Dell Technologies as a proven partner, and together, we strive to achieve more than the desired results. The triumph of this strategic project is a testament to our exceptional expertise, the unwavering dedication of the Venkateshwara Hospital team, and the robustness of Dell's solutions."

Mr. Gurpreet Singh
Founder and MD
Arrow PC

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Key benefits accrued to Venkateshwar Hospital:

- High availability of resources, critical applications and datacenter automation
- Future readiness and provisioning through deployment of virtualization and clustering with robust infrastructure and software
- Access and management of all servers from a centralized dashboard
- Achievement of near zero downtime, thus negating disruption of critical services at the hospital
- Optimized infrastructure costs
- Improved end-user experience with seamless access to data across applications
- Parallel data processing of medical lab tests and consolidated reporting

Conclusion

Venkateshwar Hospitals was impressed with the overall delivery of the project and the excellent coordination, technical expertise, and professional conduct of the entire Dell Technologies and Arrow PC team involved in the process. Mr. Sharma and his team feel increasingly empowered with this new IT system. They are now able to spearhead innovation instead of worrying about managing complex hardware. Venkateshwar hospitals are forging ahead with newer business and IT initiatives that will help them to stay ahead of the technology curve.

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"We offer valuable, quick-to-deploy and scalable solutions to support our customers' IT transformation, aligned with their business growth. We are proud to partner with Venkateshwar Hospitals and drive their success by delivering high end-user experience, future readiness and enhancing operational efficiency."

Mr. Manish Gupta
VP and GM
Infrastructure Solutions Group
Dell Technologies

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